



75
Azadi Ka
Amrit Mahotsav



केन्द्रीय भण्डारण निगम
(भारत सरकार का उपक्रम)

CENTRAL WAREHOUSING CORPORATION

(A Govt. of India Undertaking)

जन-जन के लिए भण्डारण/Warehousing for Everyone



No.CWC/CO-EDOENGG./1841/2021-ENGG

dt.28.09.2021

CIRCULAR

Sub: Adoption of DSR-2021.

With the approval of Competent authority, it was directed to use latest DSR for estimation of Civil & Electrical works of CWC. The plinth area rates for godown construction is also updated based on latest DSR-2021. These are termed as Plinth Area Rates-2021 for godowns & roads. Moreover, rates of NSI items which are frequently used in Engineering works but not scheduled in DSR are also worked out and enclosed herewith for reference.

Therefore, all Regional Manager & Head of Engineering are advised to follow the above instructions henceforth.

Encl: As above

**(ABHI KADIAN)
EXECUTIVE ENGINEER
FOR CHIEF ENGINEER (I/c)**

Copy to:

1. GGM(F&A),CWC,CO,New Delhi.
2. GGM(System),CWC,CO,New Delhi with the request to upload on website.
3. GM(Com.)/GM(Fin.),CC,CO,New Delhi.
4. All RMs/HOEs,CWC,ROs
5. AGM(Vig.)/EE(Vig.),CWC,CO,New Delhi.
6. All EEs/AEs,CWC,CO-Engineering Division,New Delhi.
7. PS to MD/Director(MC&P)/Dir.(Fin.)/Dir.(Per.),CWC,CO,New Delhi.
8. Guard file.

निगमित का0: 4/1, सीरी इंस्टीट्यूशनल एरिया, अगस्त क्रांति मार्ग, हौज़ खास, नई दिल्ली-110016

CO: 4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110016 📞 011-49857894 ई-मेल: engg.cwhc@cewcor.nic.



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Plinth area rates for 2021

S.NO	Particulars	Unit	Rate	Refrence
1.	Construction of godowns and platform in brick masonry	Sqm	Rs.10462.00	Annexure I & II
2.	Construction of Roads with M40 Paver block	Sqm	Rs. 2587.00	
3.	Cost Index for Godown	--	---	Annexure III

Pgae-1

निगमित का0: 4/1, सीरी इंस्टीट्यूशनल एरिया, अगस्त क्रांति मार्ग, हौज़ खास, नई दिल्ली-110016

CO: 4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110016 📞 011-49857894 ई-मेल: engg.cwhc@cewcor.nic.

Technical Specifications For Godown with Brick Work

S.No	Items of Work	Specification
1.	<u>FOUNDATIONS</u> Column Walls Plinth Beam	RCC NM 1:1.5:3 (1 Cement: 1.5 Coarse Sand (Zone-III): Grade Stone Aggregate 20 mm Nominal Size) Isolated Footing as per CWC Drawing No. CWC/PG/245/3 for 21.80 m c/c span Godown and Drawing No. CWC/PG/280/3 for 28.70 m c/c span Godown. Wall Footings with Masonry Construction in Brickwork with Non-Modular F.P.S Bricks of Class Designation 7.5 in Cement Mortar of 1: 6 (1 Cement: 6 Coarse Sand (Zone-III)) as per CWC Drawing No. CWC/PG/245/3 for 21.80 m c/c span Godown and Drawing No. CWC/PG/280/3 for 28.70 m c/c span Godown. 20 cm thick with RCC NM 1:1.5:3 (1 Cement: 1.5 Coarse Sand (Zone-III): Grade Stone Aggregate 20 mm Nominal Size) at Plinth Level. TOC (Top of Concrete) 1.2 m
2.	Plinth Level	Plinth Level- 1.2 m above Average Road Top
3.	<u>SUPERSTRUCTURE</u> Column Walls	RCC NM 1:1.5:3 (1 Cement: 1.5 Coarse Sand (Zone-III): Grade Stone Aggregate 20 mm Nominal Size) up to eave height as per CWC Drawing No. CWC/PG/245/3 for 21.80 m c/c span Godown and Drawing No. CWC/PG/280/3 for 28.70 m c/c span Godown. Masonry Construction in Brickwork with Non-Modular F.P.S Bricks of Class Designation 7.5 in Cement Mortar of 1: 6 (1 Cement: 6 Coarse Sand (Zone-III)) supported with Intermediate columns and RCC bands at lintel level and Tie level as per CWC Drawing No. CWC/PG/245/3 for 21.80 m c/c span Godown and Drawing No. CWC/PG/280/3 for 28.70 m c/c span Godown.
4.	Roofing	1. Tubular Truss with all steel tubes conforming to latest IS 1161 & Grade YST-22 Hot Finished, Grade ERW YST-22 with carbon content less than 0.3 % and all other steel conforming to latest IS 2062 as per CWC Drawing No. CWC/PG/105/3 and CWC/PG/104/3 for 21.80 m c/c span Godown , Drawing No. CWC/PG/416/2 for 28.70

S.No	Items of Work	Specification
		<p>m c/c span Godown and Drawing No. CWC/PG/106-A/1 for 1.83 m cantilever Platform Truss.</p> <ol style="list-style-type: none"> 2. The Roof and veranda should be covered with 0.60 mm thick TCT, Colour Coated Galvalume Profile Steel Sheet with depth of 30 mm and pitch of corrugation 200 mm, AZ-150, Material Yield Strength 550 MPa with regular modified polyester paint and coating of 20-25 micron RMP on exposed surface including primer and 7-10 micron epoxy coating on unexposed surface including primer fixed with stainless steel self-drilling/taping screw of size 6 x 50 mm with EPDM seal and stainless steel plain washer. 3. 0.60 mm thick Flashings (up to 600 mm) at gable ends and matching profile ridge (500- 600 mm) at crown. 4. Colour of roof sheet shall be White in case of new constructions and it will be of same matching colour in case of extension of Godown.
5.	Doors and Windows	<ol style="list-style-type: none"> 1. V6 bottom ventilator of size 600 mm x 600mm having MS Frame made of 30 x 30 x 5mm angle iron with GI wire Mesh Fabric of size not more than 17 x 17 mm having wire diameter 2mm and MS Flat Louvers complete with all necessary fittings as per CWC drawing No. CWC/PG/414. 2. V4 top ventilator of size 1500 x 600 mm having MS frame made of 40 x 40 x 6 mm Angle iron with 4.0 mm thick Glass panes in shutters covered with Expanded Metal Mesh frame made up of expanded metal 20 x 60 mm strands 3.25 mm wide and 1.6mm thick and frame made of 25 x 6 mm thick complete with all necessary fittings as per CWC Drawing No. CWC/PG/380/5 3. 1mm thick MS sheet steel door having clear door opening 1.83 x 2.44 m with frame and diagonal braces of 40x40x6mm angle iron and 3 mm MS gusset plates at junction and corners complete with all necessary fittings as per CWC Drawing No. CWC/PG/380/5
6.	Flooring (Godown)	<ol style="list-style-type: none"> 1. Subgrade Preparation and Level increase by Filling Selected Good Earth and Compacting under OMC. 2. Base Course 150 mm thick WMM layer overlain by 75 mm thick

S.No	Items of Work	Specification
		<p>CC NM (1 cement: 4 Coarse Sand (Zone-III) : 8 40 mm Nominal Aggregate).</p> <p>3. Top Course Vacuum Dewatered 75 mm Thick NM CC (1 Cement: 1.5 Coarse Sand(Zone-III) : 3 20 mm Nominal Aggregate).</p> <p>4. Non-Metallic Floor Hardener with minimum 4.5 kg/sqm.</p> <p>5. Panel shall be made in size not more than 4m and not less than 3m in either direction</p> <p>6. Groove of size 20 x 6 mm shall be made and filled with bitumen hot sealing compound Grade-A</p>
7.	Flooring (Verandah)	<p>1. Subgrade preparation and level increase by Filling Selected Good Earth and Compacting under OMC.</p> <p>2. Base Course 230 mm thick layer of Fine Sand overlain by 120 mm thick CC NM (1 cement: 5 Coarse Sand (Zone-III): 10 40 mm Nominal Aggregate).</p> <p>3. Top Course Vacuum Dewatered 75 mm Thick NM CC (1 Cement: 1.5 Coarse Sand (Zone-III): 3 20 mm Nominal Aggregate).</p> <p>4. Non-Metallic Floor Hardener with minimum 4.5 kg/sqm.</p> <p>5. Panel shall be made in size not more than 4m and not less than 3m in either direction</p> <p>6. Groove of size 20 x 6mm shall be made and filled with bitumen hot sealing compound Grade-A</p> <p>7. 100 mm thick RCC 1:1.5:3 (1 Cement: 1.5 Coarse Sand (Zone-III): 3 20 mm Nominal Aggregate) flooring in front of doors only as per CWC Drawing No. CWC/PG/168A.</p> <p>8. RCC Nosing with RE details as per CWC Drawing No. CWC/PG/168A and CWC/PG/415 protected with steel fender IS size 100 x100 x 8mm angle iron</p>
8.	Finishes	<p>i) Internal Finishes</p> <p>1. 12 mm thick cement plaster (1 Cement: 6 Fine Sand(Zone IV)</p> <p>2. White washing with Lime with three or more coats.</p> <p>3. Synthetic Enamel Paint and primer on all</p>

S.No	Items of Work	Specification
		<p>steel works with two or more coats.</p> <p>ii) External Finishes</p> <ol style="list-style-type: none"> 1. 12 mm thick cement plaster (1 cement: 6 fine Sand) 2. Premium Acrylic Emulsion paint having VOC less than 50 gm/litre and UV resistance as per IS 15489:2004 with two or more coats over priming coat of exterior primer. 3. Synthetic Enamel Paint and primer on all steel works with two or more coats.
9.	Road	<ol style="list-style-type: none"> 1. Subgrade preparation and level increase by Filling Selected Good Earth and Compacting under OMC. 2. Base Course 200 mm thick layer of WMM overlain by 100 mm thick CC NM (1 cement: 4 Coarse Sand (Zone-III): 8 40 mm Nominal Aggregate). 3. Top Course CC M-40 Paver Block of size 200mm x 100mm x 100 mm laid over bed of coarse sand with average thickness 65 mm.

GENERAL ENGINEERING SPECIFICATIONS

General details of standard conventional godown of 6264 Metric Tonne Capacity(MTC)**(A) Details for 21.80 m C/C span godown (capacity = 6264MT, compartment = 3 Nos.):**

- Godown size (Centre to Centre) = 125.55m x 21.80m
- Godown size (Outer to Outer) = 126.01m x 22.26m
- Godown size excluding Verandah: 126.01m x 22.26m
- Godown size including one Verandah (1.83m): 126.01m x 24.09m

(B) Details of 28.7 m C/C span godown (capacity = 6264MT, compartment = 2 Nos.):

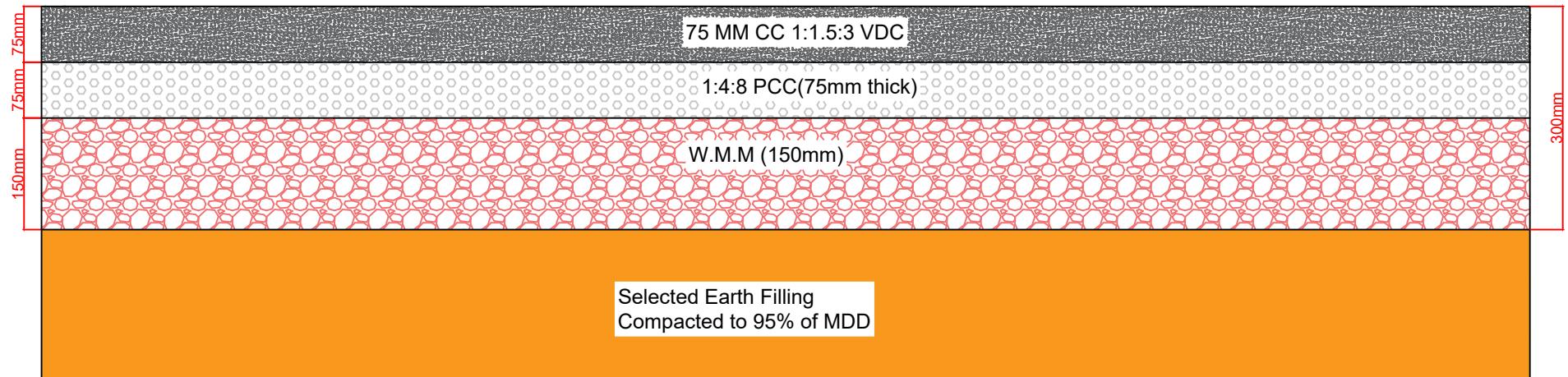
- Godown size (Centre to Centre) = 92.80m x 28.70m
- Godown size (Outer to Outer) = 93.26m x 29.16m
- Godown size excluding Verandah: 93.26m x 29.16m
- Godown size including one Verandah (1.83m): 93.26m x 30.99m

(C) General details for both the spans

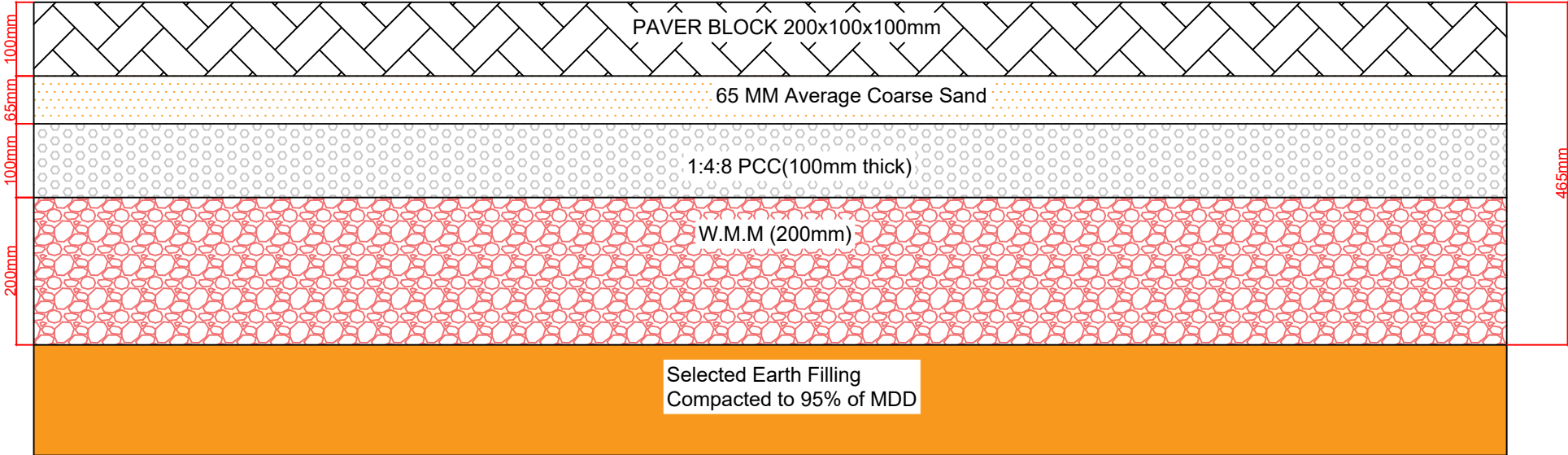
1. Road side Verandah Width: 1.83m
2. Plinth level: 1.20 m for road fed from top of road level
3. 6264 MTC Godown = 3 Compartments for 21.80 m span
4. 6264 MTC Godown = 2 compartments for 28.70 m span
5. Each Compartment C/C length (9 panels) = 41.85m for 21.80 m span. Ist compartment C/C length (9 panels) = 52.20 m for 28.70 m span and 2nd compartment C/C length (7 panels) = 40.60 m for 28.70 m span
6. No. of Stacks (size = 6.10m x 9.14m) (174 MT each stack) in each standard Compartment of 9 panels = 12 Nos. for 21.80 m span
7. No. of stacks (size = 6.10m x 9.14m) (174 MT each stack) in each standard compartment of 9 panels = 20 Nos. for 28.70 m span
8. Godown height on each side in respect of road-fed = 6.08 m above plinth level at eaves
9. Verandah Truss height on road side = 3.48 m, Verandah Truss height from floor level
10. Shutters/Doors
 - (a) No. of Rolling shutters/Steel garage doors = 12 Nos. in 6264 MT for 21.80 m span
 - (b) No. of rolling shutters/Steel garage doors = 14 nos. in 6264 MT for 28.70 m span
 - Size of rolling shutters (Clear opening) = (1.83m x 2.44m)
11. Ventilators
 - (a) Bottom Ventilators (V6) size 0.60m x 0.60 m = 42 Nos. (Both long walls) for 21.80 m span
 - (b) Bottom Ventilators (V6) size 0.60m x 0.60 m = 18 Nos. (Both long walls) for 28.70m span
 - (c) Top Ventilators size 1.50m x 0.60m = 54 Nos. (Both long walls) for 21.80m span (one in each panel)
 - (d) Top Ventilators size 1.50m x 0.60m = 64 Nos. (Both long walls) for 27.80m span (two in each panel)

Note: For road fed godowns, continuous platform of 1.83 metre width shall be provided on front side of the godowns. On the back side, 0.23m projected RCC nosing is provided only in front of garage doors / rolling shutters or 0.90 meter wide platform is provided in front of garage shutters/rolling shutters' openings only as per site requirement.

Flooring Section



Road Section



Detail of cost for road with M40 Paver Block on CPWD DSR 2021/ NSI 2021

Sr.No	Description of Items	Length	Breadth	Height	Quantity	Unit	Rate	Amount	Ref
1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earthwith lead upto 50 metres.	10.00	10.00		100.00	sqm	180.50	18050.00	16.1
2	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paverfinisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achievethe desired density, complete as per specifications and directions of Engineer-in-Charge.	10.00	10.00	0.20	20.00	CUM	2803.65	56073.00	16.79
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	10.00	10.00	0.10	10.00	CUM	6326.05	63260.50	4.1.8
4	Manufacturing, supplying and laying precast concrete heavy duty blocks of grade M-40 of size 200 X 100 X 100 mm thick including providing 50 to 80mm thick average bedding layer of coarse sand below CC block as per required grading and specifications. The rate shall include high strength OPC Cement as per IS 8112 - 1989 and all lead, lifts, materials, labour, equipment & testing etc. complete in all respects as directed by Enineer - in - Charge	10.00	10.00		100.00	sqm	1213.00	121300.00	NSI 8-2021
							total	258683.50	
	Cost per sqm						total	2586.84	

Say **2587** per sqm

COST INDEX FORMAT FOR GODOWN							
Sl.No	Description	Unit	Rate as per DSR 2021	Weightage	Market Rate **	Cost Index	Remarks.
1	2	3	4	5	6	7	8
	MATERIAL						
1	Cement (OPC/PPC)	tonne	5145.72	7.73			
2	Twisted steel/ deformed TMT	quintal	4914.57	4.88			
3	Mild steel tubes electric resistant or induction butt welded	kg	50.15	8.70			
4	Colour coated galvalume profile sheet 0.60 mm TCT	sqm	517.80	8.54			
5	Common burnt clay F.P.S. (non modular) bricks class designation 7.5	1000 Nos	5027.15	12.87			
6	Structural steel such as tees, angles channels and R.C. joists	quintal	4964.57	1.60			
7	Stone Aggregate (Single size) :	cum	1478.19	1.73			
8	Stone Aggregate (Single size) :	cum	1563.93	3.19			
9	Stone Aggregate (Single size) :	cum	1513.93	0.93			
10	Coarse sand (zone III)	cum	1663.93	5.03			
11	Non-metallic floor hardner i/c carriage	kg	12.00	0.71			
	LABOUR						
12	Skilled - Mason-I/Blacksmith-	day	784.00	5.64			
13	Mason (Average)	day	749.00	1.42			
14	Semiskilled- Bhisti/Mason-II, Bandhani/Painter	day	714.00	8.35			
15	Unskilled- Beldar/coolie	day	645.00	25.01			
	T&P / MISCELLANEOUS						
16	Sundries	L.S.	2.12	1.70			
17	Welding by electric plant	cm	2.00	1.00			
18	Hire charges of diesel truck - 9 tonne (witout POL)	day	2000.00	0.97			
				100.00			
	Cost Index for Godown		=				Net Cost Index= Total of Col.7-

**

1. Market Rate for Materials/T&P/Miscellaneous should be FOR Site/upto site but exclusive of GST and Contractor Profit.

2. Labour rates taken should be the maximum of the three of a) Minimum Wages Notified by State Government b) Minimum Wages Notified by Central Government and c) Prevailing Market Rate excluding Labour Cess.

3. Site AE/EE/HOE should certify that the market rates taken are lowest prevailing rates for Materials/T&P/Miscellaneous and the Labour Rates taken are maximum of the three mentioned in Point no. 2 at the site of work at the time of preparation of Cost Index.



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Chapter-II

Non Schedule Rates

Non Schedule Items

SL. No.	Description of Item	Unit	Rate with GST 12 %
NSI 1- 2021	Providing and fixing colour coated galvalume profile sheets (Make- TATA/JSW) with the depth of 30 mm and pitch of corrugation 200 mm (Colour and shape of profile as approved by the Engineer-in-charge), 0.60 mm(TCT) total coated thickness(tolerance as per relevant IS code), material yield strength 550 MPa, galvalume AZ-150 GSM (both side inclusive) with regular modified polyester paint and coating of 20-25 micron RMP on exposed surface including primer and 7-10 micron epoxy coating on unexposed surface including primer. The sheet should be supplied in single length as shown in drawing or as desired by engineer in charge and shall be fixed using stainless steel Hex cap headed self drilling/ tapping stainless steel screws M6, 50 mm long with 3 mm thick EPDM seal and Stainless steel stitching screw of size 19X2.5 mm excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. All screw should be sealed with silicon sealant.	Sqm	830.70
NSI 2- 2021	Providing and fixing colour coated galvalume sheets roofing accessories (Make-TATA/JSW), 0.60 mm total coated thickness (TCT) , material yield strength 550 MPa, galvalume AZ-150 GSM (both side inclusive) with regular modified polyester paint and coating of 20-25 micron rmp on expose surface including primer and 7-10 micron epoxy coating on unexposed surface including primer using stainless steel self drilling/ tapping screws of size 6x50 mm with 3 mm thick EPDM seal and Stainless steel plain washer complete : Matching Profile ridge (500 - 600mm).	Metre	610.20
NSI 3- 2021	Providing and fixing colour coated galvalume sheets roofing accessories (Make-TATA/ JSW), 0.60 mm total coated thickness (TCT) , material yield strength 550 MPa, galvalume AZ-150 GSM (both side inclusive) with regular modified polyester paint and coating of 20-25 micron rmp on expose surface including primer and 7-10 micron epoxy coating on unexposed surface including primer using stainless steel self drilling/ tapping screws of size 6x50 mm with EPDM seal and Stainless steel plain washer complete : Flashing/ Apron (Upto 600mm).	Metre	545.30
NSI 4- 2021	Repair / Refilling gap between roof sheet and walls with cement concrete 1:1.5:3 (1 cement: 1.5 Coarse sand (Zone III), 3 graded stone aggregate 20 mm nominal size) and finishing/ leveling with avg 6 mm thick cement plaster both side of mix 1:3 (1 cement : 3 fine sand) to match with existing wall plaster i/c scaffolding and all lead and lift complete as per direction of Engineer -in-charge.(avg thickness of CC 50 mm)	Sqm	552.70
NSI 5- 2021	Providing and spreading non-metallic floor hardener minimum @ 4.5kg/sqm in floor concrete (as per manufactures specifications and approved by Engineer-in-charge). Nothing extra shall be payable if manufacturer specifies extra quantity.	Sqm	80.90
NSI 6- 2021	Providing and fixing channels for preparing panels of required size and then dewatering of the concrete with vaccum dewatering machine finishing with mechanical trowel with trimix matching (thickness of flooring 75 to 150 mm, along with cutting groove joints at appropriate spacing as per direction of engineer in charge (concrete and steel to be paid separately as per relevent item)	Cum	610.00
NSI 7- 2021	Extra for providing and fixing Aluminium wind ties of 40 x 6 mm section.	Metre	212.70
NSI 8- 2021	Manufacturing/ Providing and laying precast inter locking cement concrete paver blocks of grade M-40 and size 200mm X 100mm X 100 mm including providing and laying 50 to 80mm (avg 65 mm) thick layer of bedding sand, joint filling with fine sand, compacting with plate compactor and final compaction with vibratory roller etc. as per specification. The item includes all cost of paver blocks i.e., cost of ingredients of paver blocks such as sand, aggregate, cement of high strength OPC cement as per IS 8112-2013, cost of bedding as well as sand filled in joints. The rate shall also include all lead, lifts, materials, machine tools, plants, labour, equipment & testing etc. complete in all respects as directed by Enineer - in - Charge	Sqm	1213.00
NSI 9- 2021	Steel work in single section for door frame, made of M.S. angle 75x75x6mm, joints mitred, welded with 8 Nos., 30 cm. long lugs of M.S. Angle40X40x6mm to act as hold fasts, complete" as per drg. No.CWC/PG/380/5 applying priming coat of approved steel primer, fixing in Cement Concrete Block of mix 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) of 30x30x23 cm. etc.	Kg	99.50
NSI 10- 2021	Providing & fixing expanded metal mesh frame with expanded metal 20x60 mm strands 3.25 mm wide and 1.6 mm thick, and frame made of 25x4 mm M.S. flat sub divided into three equal panels with 25x4 mm M.S. Flat expanded metal to be fixed with 19x3mm M.S. Beading tack welded, 4 nos. of M.S. Cleats of size 50x50x4 mm size with holes for 12 mm dia. bolt i/c and manufacture and priming coat of approved steel primer complete as per drg. No.CWC/PG/385 and as per instructions of Engineer- in- charge. The whole frame with expanded metal mesh is to be fixed on the outer side of V4 openings with required size of fasteners 10x80 mm size	Kg	186.22

SL. No.	Description of Item	Unit	Rate with GST 12 %
NSI 11- 2021	Excavating, supplying and filling of local earth (including royalty) by mechanical transport for all lead and lift also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete	Cum	368.65
NSI 12- 2021	Providing and fixing Angle iron frames for doors, windows and ventilators of mild steel Angle sections of required size for V4 and V6 complete as per CWC Drawing No. CWC/PG/380/5(For V4) and CWC/PG/414 (For V6), joints mitred and welded by angle iron or MS flat pieces and/or GI Fabric of required size to the MS angle frames fixed with holdfast including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer, all complete as per the direction of Engineer-In-charge. Note- The fixing of glass panes and cement concrete block shall be paid separately under relevant items	Kg	103.70
NSI 13- 2021	Providing and fixing 1mm thick M.S. sheet steel door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners by using MS angles 40x40x6 mm for diagonal braces, all necessary fittings like bush hinges, handles, tower bolts, sliding door bolts as per drawing No./ CWC/PG/380/5 complete, including applying a priming coat of approved steel primer.Using M.S. angels 40x40x6 mm for diagonal braces	Sqm	4781.15

NSI-1-2021

Analysis of Non Schedule Item based on DAR-2021/ Market Rate Item

Providing and fixing colour coated galvalume profile sheets (**Make- TATA/JSW**) with the depth of 30 mm and pitch of corrugation 200 mm (Colour and shape of profile as approved by the Engineer-in-charge), **0.60 mm(TCT) total coated thickness**(tolerance as per relevant IS code), material **yield strength 550 MPa**, galvalume **AZ-150 GSM** (both side inclusive) with **regular modified polyester paint and coating of 20-25 micron RMP on exposed surface including primer and 7-10 micron epoxy coating on unexposed surface including primer**. The sheet should be supplied in single length as shown in drawing or as desired by engineer in charge and shall be fixed using stainless steel Hex cap headed **self drilling/ tapping stainless steel screws M6, 50 mm long with 3 mm thick EPDM seal and Stainless steel stitching screw of size 19X2.5 mm** excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. All screw should be sealed with silicon sealant.

Based on item no, 12.50+12.64.1 /CPWD DAR 2021

Rs. **830.70** per sqm

Code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Details of cost of 216.14 sqm consider a shed of 20x10 meters.				
	(External dimensions of plinth)				
	Area of roof-				
	20.2 x 10.7 m = 216.14 sqm				
	MATERIAL				
Rate received for Delhi (i/c GST and FOR site)	Sheets used = 20 nos. x 10.70m x 1.04 m = 222.56 sqm wastage not taken as we are using single length sheet with no provision for transparent sheet and turbo ventialtor				
	Colour coated galvalume profile sheet 0.60 mm TCT	Sqm	222.56	517.80	1,15,241.57
3074	stainless steel self tapping screw of 6x50 mm with SS hex cap and 3 mm thick EPDM seal(per sqm 4 nos) 216.14x4= 864.55 nos(i/c stitching screw of adequate size as per direction of engineer in charge)	100 nos	8.65	500.00	4,325.00
9999	Carriage of screws, washers	L.S.	8.06	2.12	17.09
9999	Sundries(sealant etc.)	L.S.	39.52	2.12	83.78
	LABOUR				
o130	Mistry	Day	2.34	784.00	1,834.56
o112	Carpenter 2 nd class	Day	9.34	714.00	6,668.76
o114	Beldar	Day	9.34	645.00	6,024.30
	Total (W)				1,34,195.06
	Add 1% water charges (on W)				1341.95
	Total (X)				135537.01
	add GST (Multiplying factor 0.1405) (on X)				19042.95
	total (Y)				154579.96
	Add 15 % Contactor's profit and overheads (on Y)				23,186.99
	total (Z)				1,77,766.95
	add labour cess @ 1 % (on Z)				1,777.67
	cost for 216.14 sqm				1,79,544.62

Cost of 1.00 sqm.				830.69
Say (A)				830.70
Rate for works where GST is 18 % (Multiplving factor 1.06 on A)				880.54

ASSISTANT ENGINEER

EXECUTIVE ENGINEER

NSI 2- 2021

Analysis of Non Schedule Item based on DAR-2021 / Market Rate Item

Providing and fixing colour coated galvalume sheets roofing accessories (**Make-TATA/JSW**), **0.60 mm total coated thickness (TCT)**, material **yield strength 550 MPa**, galvalume AZ-150 GSM (both side inclusive) with **regular modified polester paint and coating of 20-25 micron rmp on expose surface including primer and 7-10 micron epoxy coating on unexposed surface including primer using stainless steel self drilling/ tapping screws of size 6x50 mm with 3 mm thick EPDM seal and Stainless steel plain washer complete : Matching Profile ridge (500 - 600mm).**

Based on 12.66.1/ CPWD DAR-2021

Rs. 610.20 per m

Rate code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Details of cost of 20.20 metre				
	One piece plain ridges				
	consider a shed of 20x10 meters (External dimensions of plinth)				
	Length of ridges 20.2 metre+ overlap and wastage =23.11 metre				
	MATERIAL				
	Galvalume profile ridges				
MR	0.60 mm TCT and 500-60 mm wide	metre	23.11	330.51	7638.09
	(The ridge is to be fixed with the same hooks /nuts as the sheets)				
9999	sundries (sealant etc.)	L.S.	6.76	2.12	14.33
	Labour				
o130	Mistry	Day	0.14	784.00	109.76
o112	Carpenter 2 nd class	Day	0.55	714.00	392.70
o114	Beldar	Day	1.64	645.00	1057.80
	TOTAL (W)				9212.68
	Add 1% water Charges (on W)				92.13
	TOTAL (X)				9304.80
	add GST (Multiplying factor 0.1405) (on X)				1307.32
	total (Y)				10612.13
	Add 15% Contractor's profit and overheads (on Y)				1591.82
	total(Z)				12203.95
	Add Cess @ 1 % (on Z)				122.04
	Cost of 20.20 metre				12325.99
	Cost of 1.00 metre				610.20
	Say (A)				610.20

Rate for works where GST is 18 %
(Multiplvina factor 1.06 on A)

646.81

ASSISTANT ENGINEER

EXECUTIVE ENGINEER

NSI 3-2021

Analysis of Non Schedule Item based on DAR 2021 / Market Rate Item

Providing and fixing colour coated galvalume sheets roofing accessories (**Make-TATA/ JSW**), **0.60 mm total coated thickness (TCT)**, material **yield strength 550 MPa**, galvalume **AZ-150 GSM (both side inclusive)** with **regular modified polyester paint and coating of 20-25 micron rmp on expose surface including primer and 7-10 micron epoxy coating on unexposed surface including primer using stainless steel self drilling/ tapping screws of size 6x50 mm with EPDM seal and Stainless steel plain washer complete : Flashing/ Apron (Upto 600mm).**

Based on 12.66.2/ CPWD DAR 2021

Rs. 545.30 per m

Rate code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Details of cost of 20.20 metre				
	One piece plain ridges				
	consider a shed of 20x10 meters (External dimensions of plinth)				
	Length of ridges 20.2 metre+ overlap and wastage =23.11 metre				
	MATERIAL				
	Galvalume Flashing/ Apron				
MR	0.60 mm TCT and 500-60 mm wide (The ridge is to be fixed with the same hooks /nuts as the sheets)	metre	23.11	322.03	7442.11
9999	sundries (sealant etc.)	LS	3.25	2.12	6.89
	Labour				
o130	Mistry	Day	0.07	784.00	54.88
o112	Carpenter 2 nd class	Day	0.28	714.00	199.92
o114	Beldar	Day	0.82	645.00	528.90
	TOTAL (W)				8232.70
	Add 1% water Charges (on W)				82.33
	TOTAL (X)				8315.03
	add GST (Multiplying factor 0.1405) (on X)				1168.26
	total (Y)				9483.29
	Add 15% Contractor's profit and overheads (on Y)				1422.49
	total (Z)				10905.79
	Add Cess @ 1 % (on Z)				109.06
	Cost of 20.20 metre				11014.84
	Cost of 1.00 metre				545.29
	Say (A)				545.30

Rate for works where GST is 18 %
(Multiplving factor 1.06 on A)

578.02

ASSISTANT ENGINEER

EXECUTIVE ENGINEER

NSI 4- 2021

Analysis of Non Schedule Item based on DAR-2021

Repair / Refilling gap between roof sheet and walls with cement concrete 1:1.5:3 (1 cement: 1.5 Coarse sand (Zone III), 3 graded stone aggregate 20 mm nominal size) and finishing/ leveling with avg 6 mm thick cement plaster both side of mix 1:3 (1 cement : 3 fine sand) to match with existing wall plaster i/c scaffolding and all lead and lift complete as per direction of Engineer -in-charge.(avg thickness of CC 50 mm)

Based on 4.2.2+13.16.1/ CPWD DAR 2021

Rs. 552.70 per sqm

Rate code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Consider one gable wall and one long wall For area $(2 \times 11.80 \times 0.46) + 41.45 \times 0.34 = 10.86 + 14.09 = 24.95$ sqm avg thickness $(0.06 + 0.04) / 2 = 0.05$ m CC Copping 1:1.5:3 - $2 \times 11.80 \times 0.46 \times 0.05 = 0.54$ cum $41.45 \times 0.34 \times 0.05 = 0.70$ cum total = 1.24 cum plaster- $4 \times 11.80 \times 0.05 = 2.36$ sqm $2 \times 41.45 \times 0.05 = 4.14$ sqm total = 6.50 sqm				
DSR 2021- 4.2.2	CC 1:1.5:3	cum	1.24	9793.75	12144.25
13.16.1	plaster 6 mm 1:3	sqm	6.50	253.05	1644.83
	cost for 24.95 sqm				13789.08
	cost per sqm				552.67
	say (A)				552.70

Rate for works where GST is 18 %
(Multiplying factor 1.06 on A)

585.86

ASSISTANT ENGINEER

EXECUTIVE ENGINEER

NSI 5- 2021

Analysis of Non Schedule Item based on DAR-2021 / Market Rate Item

Providing and spreading non-metallic floor hardener minimum @ 4.5kg/sqm in floor concrete (as per manufactures specifications and approved by Engineer-in-charge).

Nothing extra shall be payable if manufacturer specifies extra quantity.

Based on MR & CPWD DAR 2021

Rate Code	Description	Unit	Qty	Rs. Rate (Rs.)	Rs. 80.90 per sqm Amount (Rs.)
	Details of cost for 10 sqm.				
	MACHINERY				
	LABOUR				
0114	Beldar	day	0.1	645.00	64.50
MR	Non-metallic floor hardner i/c carriage	kg	45	12.00	540.00
	TOTAL (W)				604.50
	Add 1% water Charges (on W)				6.05
	TOTAL (X)				610.55
	add GST (Multiplying factor 0.1405) (on X)				85.78
	total (Y)				696.33
	Add 15% Contractor's profit and overheads (on Y)				104.45
	total (Z)				800.78
	Add Cess @ 1 % (on Z)				8.01
	Cost of 10.00 Sqm				808.78
	Cost of 1.00 Sqm				80.88
	Say (A)				80.90

Rate for works where GST is 18 %
(Multiplying factor 1.06 on A)

85.75

NSI 6- 2021

Analysis of Non Schedule Item based on DAR-2021

Providing and fixing channels for preparing panels of required size and then dewatering of the concrete with vaccum dewatering machine finishing with mechanical trowel with trimix matching (thickness of flooring 75 to 150 mm, along with cutting groove joints at appropriate spacing as per direction of engineer in charge (concrete and steel to be paid separately as per relevent item)

Based on 16.75+16.42+16.43/ CPWD DAR 2021

Rs 610.00 Per cum

Rate Code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Details of cost for 1.00 cum				
	MATERIAL				
9999	Operational charges for vacuum dewatering system i/c screed vibration , placing of filter mat , top mat, vacuum process, floating , troweling, Brooming etc.	L.S.	57.20	2.12	121.26
9999	T& P charges i/c consumable power charges, loading , unloading and hire charges of equipments	L.S.	41.60	2.12	88.19
16.42(5.9.1.)	Shuttering as per AOR 16.42 For 0.075 mm thick= 0.407x1.5=0.610 rate as per 5.9.1=2485.78/10.80=230.16	sqm	0.61	230.16	140.40
9999	Cutting and making joints	L.S.	50.00	2.12	106.00
	TOTAL (W)				455.85
	Add 1% water Charges (on W)				4.56
	TOTAL (X)				460.41
	add GST (Multiplying factor 0.1405) (on X)				64.69
	total (Y)				525.10
	Add 15% Contractor's profit and overheads (on Y)				78.77
	total(Z)				603.87
	Add Cess @ 1 % (on Z)				6.04
	Cost of 1.00 cum				609.90
	Say (A)				610.00

Rate for works where GST is 18 %
(Multiplying factor 1.06 on A)

646.60

NSI 7- 2021

Analysis of Non Schedule Item based on DAR-2021

Extra for providing and fixing Aluminium wind ties of 40 x 6 mm section.

Based on 12.11/ CPWD DAR 2021

Rate Code	Description	Unit	Qty	Rs. Rate (Rs.)	Per m Amount (Rs.)
	Detail of cost for 30 metres				
	Aluminium flat 40x6mm = 30 metres + wastage @ 5 % = 31.5 metres				
	31.50 metres @ 0.67 kg per metre				
	21.11 kg = 0.2111 quintal				
7306	Aluminium flat 40 x 6mm	quintal	0.2111	19000.00	4010.90
9999	Sundries	L.S.	20.67	2.12	43.82
o102	Blacksmith 1 st class	day	0.50	784.00	392.00
o114	Beldar	day	0.50	645.00	322.50
	TOTAL (W)				4769.22
	Add 1% water Charges (on W)				47.69
	TOTAL (X)				4816.91
	add GST (Multiplying factor 0.1405) (on X)				676.78
	total (Y)				5493.69
	Add 15% Contractor's profit and overheads (on Y)				824.05
	total(Z)				6317.74
	Add Cess @ 1 % (on Z)				63.18
	Cost of 30.00 mtr				6380.92
	Cost of 1.00 mtr (Say A)				212.70
	Rate for works where GST is 18 % (Multiplying factor 1.06 on A)				225.46

NSI 8- 2021

Analysis of Non Schedule Item based on DAR-2021 / Market Rate Item

Manufacturing/ Providing and laying precast inter locking cement concrete paver blocks of grade M-40 and size 200mm X 100mm X 100 mm including providing and laying 50 to 80mm (avg 65 mm) thick layer of bedding sand, joint filling with fine sand, compacting with plate compactor and final compaction with vibratory roller etc. as per specification. The item includes all cost of paver blocks i.e., cost of ingredients of paver blocks such as sand, aggregate, cement of high strength OPC cement as per IS 8112-2013, cost of bedding as well as sand filled in joints. The rate shall also include all lead, lifts, materials, machine tools, plants, labour, equipment & testing etc. complete in all respects as directed by Enineer - in - Charge

Based on 16.68/ CPWD DAR 2021

Rate Code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Details of cost for 10.00 sqm MATERIAL				
MR	Interlocking C.C. paver block (100 mm thick, M-40)	Sqm	10.00	600.00	6000.00
O982	Coarse sand (zone 111) (10 x 0.065 = 0.65 cum)	Cum	0.65	1500.00	975.00
2203	Carriage of coarse sand	cum	0.65	163.93	106.55
0983	Fine sand (zone IV)	Cum	0.25	900.00	225.00
2203	carriage of fine sand	cum	0.25	163.93	40.98
	Labour for Laying				
0123	Mason Brick layer (1st Class)	day	0.50	784.00	392.00
0124	Mason Brick layer (2nd class)	Day	0.50	714.00	357.00
0114	Beldar	day	1.00	645.00	645.00
0115	Coolie	day	0.50	645.00	322.50
	TOTAL (W)				9064.03
	Add 1 % Water charges on "W"				90.64
	TOTAL(X)				9154.67
	Add GST on "X" (multiplying factor				1286.23
	TOTAL (Y)				10440.90
	Add 15% Contactor's profit and				1566.14
	TOTAL (Z)				12007.04
	Add Cess @ 1% on "Z"				120.07
	Cost of 10 Sqm				12127.11
	Cost per sqm				1212.71
	Say A				1213.00

Rate for works where GST is 18 %
(Multiplying factor 1.06 on A)

1285.78

NSI 9-2021

Analysis of Non Schedule Item based on DAR-2021

“Steel work in single section for door frame, made of M.S. angle 75x75x6mm, joints mitred, welded with 8 Nos., 30 cm. long lugs of M.S. Angle40X40x6mm to act as hold fasts, complete” as per drg. No.CWC/PG/380/5 applying priming coat of approved steel primer, fixing in Cement Concrete Block of mix 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) of 30x30x23 cm. etc.

Based on 10.1+10.22/ CPWD DAR 2021

Rs. 99.50 Per kg

Rate Code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
10.1	Steel work in single section				
	Door frame of MS Angles- 75x75x6 mm				
	8.66 Rmt @ 6.80 kg/m = 58.89 kg				
	ii) Hold fasts of M.S. Angle				
	40x40x6 mm				
	8x0.30x3.50kg/Rmt . = 8.40 kg	kg	67.29	93.05	6261.33
	Total = 67.29 kg.				
10.22	Welding charges by Electric welding				
	For Door Frame 4x2x8 = 64 cm.				
	Hod fasts 8x8 = 64 cm				
	Total= 128 cm.	cm	128.00	3.40	435.20
	Cost for 67.29 kg				6696.53
	Cost per kg				99.52
	Say A				99.50

Rate for works where GST is 18 %
(Multiplying factor 1.06 on A)

105.47

NSI 10- 2021

Analysis of Non Schedule Item based on DAR-2021

Providing & fixing expanded metal mesh frame with expanded metal 20x60 mm strands 3.25 mm wide and 1.6 mm thick, and frame made of 25x4 mm M.S. flat sub divided into three equal panels with 25x4 mm M.S. Flat expanded metal to be fixed with 19x3mm M.S. Beading tack welded, 4 nos. of M.S. Cleats of size 50x50x4 mm size with holes for 12 mm dia. bolt i/c and manufacture and priming coat of approved steel primer complete as per drg. No.CWC/PG/414-AC and as per instructions of Engineer- in- charge. The whole frame with expanded metal mesh is to be fixed on the outer side of V4 openings with required size of fasteners 10x80 mm size

Based on 9.48.1+13.50.3/CPWD DAR 2021

Rs. **186.22** Per kg

Rate Code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Materials: Area of frame with expanded metal (drg. No.CWC/PG/414-AC) 1.01 sqm.				
	M.S. Flat 25x4mm				
	2x1.55 = 3.10 Rmt.				
	4x0.60 = 2.40				
	Total= 5.50 Rmt.				
	5.50x0.79 Kg./Rmt. = 4.35 Kg.				
	M.S. Beading 19x3 mm				
	5.50x0.45 kg./Rmt.= 2.48 kg.				
1008	M.S. Cleat 50x4mm	Kg.	7.50	48.50	363.75
	(50 mm long)				
	4x0.05x0.004				
	,= 0.00004x7850 kg./M3 =0.31 kg.				
	Total wt. = 7.14 kg.				
	Wastages @ 5% = <u>0.36</u>				
	Grand Total = <u>7.50 kg.</u>				
1015	Expanded Metal 20x6 mm	Sqm.	1.06	280.00	296.80
	1.55x0.65 = 1.01				
	wastage 5% = <u>0.05</u>				
	Total = <u>1.06 M2</u>				
2205	Carriage of Expanded Metal, and flats, beading etc.	MT	0.012	145.72	1.75
	1.06x4.078 = 4.32 Kg.				
	+ <u>7.50 Kg.</u>				
	Total= 11.82 Kg.				
	SAY 12 Kg.				
	LABOUR				
o102	BlackSmith Ist class	Each	0.50	784.00	392.00
	(<u>0.86 /20.45</u>) x 12.00 = 0.50 No.s				
o114	Beldar (<u>1.10 /20.45</u>) x 12.00 = 0.65 No.	Each	0.65	645.00	419.25
	Welding charges	L.S.	11.60	2.12	24.59
	(19.76/20.45) x 12.00 = 11.6				
	Sundries (<u>26.91/20.45</u>) x 12 = 15.79	L.S.	15.79	2.12	33.47
	Priming Coat				
	Details for 1.01 sqm. (Based on Item No.13.50 .3of Vol - II AOR 2021)				
	Materials	Ltr.	0.05	120.00	6.00

Rate Code	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
	Primer $(\frac{0.54}{10}) \times 1.01 = 0.05$				
	Carriage $(\frac{0.52}{10}) \times 1.01 = 0.05$	L.S.	0.05	2.12	0.11
	Painter $(\frac{0.24}{10}) \times 1.01 = 0.02$	Each	0.02	714.00	14.28
	Coolie $(\frac{0.24}{10}) \times 1.01 = 0.02$	Each	0.02	645.00	12.90
	Brushes, sand paper i/c Sundries $(\frac{10.79}{10}) \times 1.01 = 1.09$	L.S.	1.09	2.12	2.31
	Total (W)				1567.21
	Add 1% water Charges (on W)				15.67
	TOTAL (X)				1582.88
	add GST (Multiplying factor 0.1405) (on X)				222.40
	total (Y)				1805.28
	Add 15% Contractor's profit and overheads (on Y)				270.79
	total(Z)				2076.07
	Add Cess @ 1 % (on Z)				20.76
	Cost of 1.01 sqm/ $(7.14+4.12)= 11.26$ kg				2096.83
	Cost of 1.00 kg				186.22
	SAY (A)				186.22

Rate for works where GST is 18 %
(Multiplying factor 1.06 on A)

197.39

SL./ No.	Description of Item	Unit	Rate	Ref
NSI 11-2021	Excavating, supplying and filling of local earth (including royalty) by mechanical transport for all lead and lift also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete	Cum	368.65	2.25(A)
NSI 12-20 21	Providing and fixing Angle iron frames for doors, windows and ventilators of mild steel Angle sections of required size for V4 and V6 complete as per CWC Drawing No. CWC/PG/380/5(For V4) and CWC/PG/414 (For V6), joints mitred and welded by angle iron or MS flat pieces and/or GI Fabric of required size to the MS angle frames fixed with holdfast including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer, all complete as per the direction of Engineer-In-charge. Note- The fixing of glass panes and cement concrete block shall be paid separately under relevant items	Kg	103.70	10.31
NSI 13-20 21	Providing and fixing 1mm thick M.S. sheet steel door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners by using MS angles 40x40x6 mm for diagonal braces, all necessary fittings like bush hinges, handles, tower bolts, sliding door bolts as per drawing No./ CWC/PG/380/5 complete, including applying a priming coat of approved steel primer.Using M.S. angels 40x40x6 mm for diagonal braces	Sqm	4781.15	10.5.1